

## ABSTRACT OF THE DISCLOSURE

A device and method to determine the biological heat potential consists of an acclimation apparatus for aerobic seed source, a reactor to carry out the desired biological reaction, an external temperature controller to control and heat the ambient air surrounding the reactor at a preset temperature, an oxygen  
5 controller to supply and record the oxygen depleted within the reactor with an output of oxygen uptake data, an internal heat controller to control and heat the reactor at a preset temperature with an output of heat compensation data. Based on the oxygen uptake data and heat compensation data, uses a specific biological  
10 heat potential evaluator to compute a specific biological heat potential and a heat loss flux. Then uses a heat compensation ratio evaluator to compute a transient heat compensation ratio and a minimal heat compensation ratio during the reaction period for evaluating the spontaneity of an ATAT system.

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